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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER

ART UNIT	PAPER NUMBER
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DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No. 08/950542

Applicant(s) Bachovkin

Examiner D. Lukton

Group Art Unit 1654

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 9/11/98, 10/2/98
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 35-51 is/are pending in the application.
- ☐ Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 35-51 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- The drawing(s) filed on _____ is/are objected to by the Examiner.
- The specification is objected to by the Examiner.
- The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- All ☐ Some* ☐ None ☐ of the CERTIFIED copies of the priority documents have been received.
- received in Application No. (Series Code/Serial Number) _____
- received in this national stage application from the International Bureau (PCT Rule 1 7.2(a)).

*Certified copies not received:

Attachments

- Information Disclosure Statement ☐
- Notice of Reference(s) Cited, PTO-892 ☐
- Notice of Draftsperson's Patent Drawing Review, PTO-948 ☐
- Notice of Informal Patent Application ☐
- Other ☐

Office Action Summary

Pursuant to the directives of paper No. 24 (filed 9/11/98), claims 13-14, 16-18 and 21-34 have been cancelled, and claims 35-51 added. Claims 35-51 are pending.

Applicants' arguments filed 9/11/98 have been considered and found persuasive in part. The §112, first paragraph rejections are withdrawn. The §102 rejections are withdrawn, as is the §103 over Metternich ('707). However, the pending claims are rejected under 35 USC §103.

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Claims 35, 37-39, 42 and 44-46 are rejected under 35 U.S.C. §112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 35 recites the following:

"An isolated compound ...wherein at least 96% of the bonds between the C and the B are in an L-configuration".

According to the first phrase ("an isolated compound") the claim is drawn to one single compound. On the other hand, the second phrase makes it clear that a mixture of stereoisomers is present. Accordingly, applicants should choose between a claim that is drawn to a single compound, and a claim that is drawn to a mixture of stereoisomers. Another minor matter concerns the phrase: "are in an L-configuration". First, the

carbon and boron that is of the L-configuration. However, chirality does not reside in a single bond; in the case of carbon, it resides in the relative disposition of no fewer than four bonds. Accordingly, the following would be better:

A mixture of stereoisomers consisting of two or more compounds of the following structure ...

... wherein said compounds, at least 96% of the carbon atoms bearing boron are of the L-configuration

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Claims 35-51 are rejected under 35 U.S.C. §103 as being unpatentable over Bachovchin (*J. Biol. Chem.* **265**, 3738, 1990).

As indicated previously, Bachovchin teaches (e.g., table I, page 3740), setting aside the question of stereochemistry, several compounds falling within the scope of claim 35. In response, applicants have argued that the reference does not affirmatively and unequivocally teach the total separation of the D-isomer from the L-isomer, and that the sole reference to such separation was based on an interpretation of the data which in retrospect is incorrect. The examiner would argue that (a) the claims would have been obvious even without the reference to separation of the diastereomers, and (b) the presumption of enablement is conferred upon a statement contained within a scientific

have been an obvious target since peptides consisting of 100% L-amino acids are those that are naturally occurring; moreover, while there are certainly numerous publications that teach the substitution of one or more D-amino acids for L-amino acids in a peptide in order to increase protease resistance, such substitutions often lead to partial loss of activity. Thus, while there could not have been absolute certainty that the peptide containing L-boroPro would have been more active than the diastereomer containing D-boroPro, there would have been reason to have expected the likelihood of some difference between the two. Certainly there would have been ample motivation to separate the peptide containing the L-boroPro from that containing the D-boroPro. Accordingly, with or without the reference (page 3743) to separation of the diastereomers, it would have been obvious to separate the two. In addition, consider that none of claims 35-46 imposes any limits on the stereochemistry of any other chiral center. Accordingly, each of claims 35-46 encompass mixtures of millions or billions of diastereomers. Add to this the virtually limitless number of combinations of amino acids that may be attached to the N-terminus. If applicants were to argue, at some future point, that they had discovered "unexpected" properties for one compound having a specific sequence of amino acids, and a specific combination of chiral centers, such "unexpectedness" would not then extend to the limitless array of other compounds that

conferred upon a statement made within a scientific publication, even if that statement later turns out to be scientifically invalid. Applicants have argued that they have provided a copy of *Biochemistry* **32**, 1993, and have proceeded to make arguments on the basis of what may have been disclosed therein. However, applicants have provided no such copy, and so no comment will be offered as to what that reference might have taught. However, comments of a more general nature are offered. Suppose that a statement is made in an issued patent that compound "X" exhibits pharmacological activity "Y", and suppose that subsequently the statement in question is proved unequivocally to be false, and further that the patent is declared invalid by an authorized court of law. As it happens, neither the scientific demonstration of the falsity of the statement in question, nor the subsequently declaration of invalidity by a court detracts from the fact that a public disclosure was made, and that such a disclosure may be used in a §103 rejection. Whether an inventor has "stumbled onto the truth" fortuitously, or whether an inventor has arrived at a valid conclusion by careful and lengthy experimentation makes little difference when deciding whether a claimed invention is obvious over an assertion made by the prior inventor.

Accordingly, the claims are rendered obvious.

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As indicated previously, Bachovchin teaches the following dipeptide:

Pro-boroPro.

(See the formula in col 1, line 50+; also "X" can be prolyl as stated in col 2, line 47). See also, for example, the structures of figure 2. The reference does not teach that the "all-L" peptide should be isolated. However, one of ordinary skill would have been motivated to isolate the "all-L" peptide, since peptides consisting of only L-amino acids are those that are naturally occurring. Viewed in another way, the peptides of '493 can be viewed as a Markush Group consisting of only two members: those in which the carbon bearing boron is of the L-configuration, and those in which it is of the D-configuration. In a Markush Group consisting of only two members, one is hard-pressed to argue that either of those two members is unobvious.

Thus, the claims are rendered obvious.

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Claims 35-51 are rejected under 35 U.S.C. §103 as being unpatentable over Bachovchin (WO 89/03223) or Flentke (*Proc Natl Acad Sci* **88**, 1556, 1991).

The teachings of the references were indicated previously. In response, applicants have argued that the references do not teach isolation of the diastereomers in which the carbon bearing boron is of the L-configuration. The examiner's explanation.

The rejection is maintained.

- The reference Wijdenes (*Monoclonal Antibodies*.... July, 1995) has been stricken from the IDS. Only an abstract has been provided. The IDS should indicate that only an abstract has been submitted; in addition, sufficient information should be provided that a person could readily obtain the exact reference that has been cited.
- References C12, C26, C61, C62, C72 and C101 have been stricken from the IDS. It is a requirement that the year of publication be provided.

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No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Lukton whose telephone number is (703) 308-3213.

An inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.



DAVID LUKTON
PATENT EXAMINER
GROUP 1800